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AUTHOR Counelis, James Steve
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ABSTRACT

The role of educational evaluation is discussed in relation to interdisciplinary courses in social science. How one evaluates student achievement, a course or an instructor can be defined by means of defining behavioral objectives. That is, the expressed outcomes of the particular course can be expressed as the goals to be met by students and on the courses being taken or taught. Some suggestions are given to aid in establishing these behavior goals. It is suggested that the use of these behaviorally defined objectives will develop a more independent learning and thinking student, as well as enhance the value of student achievement, curricular design and instructional skill. (DEP)

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by

James Steve Counelis

THE UNIVERSITY OF SAN FRANCISCO

Office of Institutional Studies

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# EVALUATION AND THE SOCIAL SCIENCE INTERDISCIPLINARY COURSE

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James Steve Counelis[+]

## Classic Questions:

The term "evaluation" is the name for any process through which "values," "worth," "preferability," "desireability," "utility," and any other merit is assigned to some object or person. The whole of axiology is involved, ranging from folk wisdom, jurisprudence, ethics, and morality, through all types of aesthetic judgments, to statistical decision theory, systems of optimizing equations and game theory. Though the processes of evaluation appear to be a very large set, certainly the objects and persons being valued are an infinite set.

The class of questions undertaken in this paper are the classical ones, these being concerned with the course and/or lesson level of curriculum. How are courses or lessons merited? By what criterion or standard is a course or lesson to be valued? How are instructors judged? By what criteria or standards are they to be valued? How is student achievement valued? By what criterion or standard is achieve-

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[+]Dr. James Steve Counelis is Director of the Office of Institutional Studies and Associate Professor of Education in the School of Education of the University of San Francisco, San Francisco, California 94117.

ment estimated? The purpose of this paper is to present some general principles governing such activities in order that such an obviously ego-involved process as evaluation can become more objective, more rational, more humane in effect.

The Phenomenology of Valuing in the Educating Experience:

Simplistically stated, instruction in all formal, informal or casual formats is a "show-and-tell" process. Reciprocally, learning is known to have occurred by the student's replicated or aped behavior of what he has been shown and told. Though this objective phenomenological view of the teaching/learning intersect may force learning theorists and humanists alike to climb a wall, the large measure of commonsense in this simplistic model of the teaching/learning intersect will serve the purposes of this paper.

That which links instructor to student is called, generically, curriculum. It could be a whole two year R.N. program in a comprehensive community college, a single graduate seminar in social theories of change, or a particular lesson in welding, the pronunciation of new words, or the use of chiaroscuro technique in painting. Whatever the level of curriculum or the subject matter area, curriculum has a linear perspectival quality given to it by those who view it through the roles of instructor and learner. Each person in these roles is ego-involved. Further, the role perspective on curriculum is tied with the inter-subjective relations of persons that lace personal worth as self-

image, concerns, and interests together. These inter-subjective feelings are perfectly natural and generally healthy facts. The problem of evaluation, though, is complicated by these very human facts.

Generically when the instructor functions in an evaluating role, he does so by viewing the learner through the phenomenological prism of his curriculum which includes his testing methodology. Likewise, the student fuctions in an evaluating role by viewing the professor through the phenomenological prism of his experienced curriculum which includes his meriting methodology. Chart No. 1 cites a graphic presentation of this linear projective model of educational evaluation, based upon the above phenomenological facts. It is quite obvious that the instructor's "curriculum" and the student's "curriculum" are not identical facts. Nor are their criteria or standards for judgment identical. Aye, there is the rub! Hence the phenomenological facts described by the linear projective model of educational evaluation provides the source of contamination in most educational situations, be it in the home, at work, or in the school.

[Insert Chart No. 1 Here.]

Educational Evaluation in Orthogonal Perspective:

The objective phenomenal facts about educational evaluation as subjective process lead more often than not to bad human relations, bad pedagogy, and to a dereliction of the educating processes, if there are no conscious constructive counteractions to the destructive potential

of subjective evaluational processes. The instructor as evaluator is always in an ego-involved role. Any challenge to the instructor's evaluation reflecting upon relevance, competence, adequacy of criteria, and/or equity is viewed personally as an attack upon him. Likewise, the student as the evaluatee is occupying an ego-involved role. Evaluation is always a challenge to his competence, integrity, and self-image. The power position of the instructor to assign grades, to affect personal well being, and dignity, and to affect further goals and progress is well understood by both instructor and student. At most, the student must rely upon the goodwill and honor of the instructor to respect and keep his fiduciary trust with his student client as a professional. In addition, the student involvement in the evaluation of particular instructors redresses the power relation at some gross level. And for those few instances of bad chemistry between particular professors and particular students, student appeal through school administrative processes usually handles such matters quite equitably. But more importantly, the student evaluation of instructors when done well provides valuable reality-testing cybernetic information to the instructors about themselves in their instructional relations with student clients.

Permit the introduction of the idea that both instructor and student need to assume the evaluator role from a different perspective, one that might be described as right-angled or orthogonal to their customary projective linear view. The orthogonal model of educational evaluation is suggested in Chart No. 2. This evaluating role in orthogonal perspective suggests a kind of "role detachment' such that instruc-

tion and learning are viewed from a common external status-role position which focuses through the curriculum, commonly understood. The curriculum, if containing objective instructional intents, behaviorally specified learnings, and criteria, would be cause for both the instructor and student the common basis for evaluating their own work in relation to each other.

[Insert Chart No. 2 Here.]

Courses taught by college and university professors usually do not possess such objectifying elements. Be they natural scientists, behavioral scientists, or humanists, most college and university professors do not think in these instructional terms. They tend to believe that their "scientific method" or their "disciplinary patterns and logics" contain within them the appropriate pedagogical qualitites for inducing student learning. These disciplinary approaches to education have much intuitive appeal to subject matter specialists who use them in their own inquiries. However in the practical order, nothing is further from the truth. Effective teaching and effective learning are specific goal-seeking processes that have little resemblence to the results of pure inquiry processes, which results are the encyclopaedic grist of disciplines turned curriculum. Instruction as "show-and-tell" is a congeries of learning induction processes. Though that congeries includes the vomited lecture, the ad nauseam replicating laboratory, and the shop that imitates work, clearly the variety of learning induction processes go beyond these formats. In the absence of specific course and lesson goals,

specified behavioral learnings, and criteria known to both instructor and student, the orthogonal evaluation perspective factually collapses into the projective linear model of educational evaluation with all of its attendent evils.

The Phenomenology of Achievement and the Limits to Mensurable Standards:

Within formal, informal, and casual learning situations, the fact of achievement is an objective yes/no observation. Achievement is noted when a "yes" can be said to someone doing any of the following: (1) solving simultaneous equations; (2) cooking Chicken Kiev; (3) doing a pirouette; (4) swimming the English Channel in record time; (5) speaking modern Greek fluently; (6) reciting the Browning monologue "My Last Duchess"; (7) composing a sonata; (8) repairing a TV set; (9) knowing the literature on the American Revolution at the doctoral level; (10) knitting Argyll socks. All of these achievements are empirically verifiable and therefore phenomenally objective. Thus Simon Binet age-graded tasks in developing a test of intelligence and the IQ ratio of mental age divided by chronological age.

For every course taught regardless of level, the instructor is forced to select from an almost infinite universe of possible learnings a manageable subset for instruction and evaluation. A standard arises when the instructor constructs a set of achievement-determining situations in which the student responses become frequency counts of yeses. Achievement measurement is thus limited to the instructor-deter-

mined set of learnings; and achievement becomes objectively some proportion of successes out of the total set of instructor-determined tested learnings.

Whether one evaluates a student teacher, or an apprentice printer, or the arithmetic skills of a sixth grader, or the quality of a poem or essay, achievement is known through objectifying observations and/or the consensus of plural observers. Performance and not intuition is the basis for knowing specific learnings have occurred. And though every student learns many other things that are not demonstrated through the instructor-developed evaluation procedures, given clearly defined course objectives and behaviorally specified learnings, their exclusion from the course evaluation is reasonable for they were not curricularly intended, even though important to the student.[1] Before entering upon a description and process for specifying behavioral objectives, a brief description of social science interdisciplinary courses seems appropriate at this point.

Social Science Interdisciplinary Course Structures:[2]

When interdisciplinary courses are viewed at the level of particulars, their number and variety appear legion. But when interdisciplinary courses are viewed at the level of structure, their number is a finite three. Discipline as knowledge (k) and discipline as the shaping of human behavior toward orderly self-controlled conduct (b) are the two structural elements in all interdisciplinary courses. The three types of interdisciplinary courses are:

Type I: $\Pi(k_0 \cap k_1 \cap \ldots .k_n)$;

Type II: $\Pi(b_0 \cap b_1 \ldots .b_n)$;

Type III: $\Sigma(k_n \cap b_n)$.

Their descriptive meaning is given below.

In the social sciences, Type I interdisciplinary courses are reflected in the following examples: (1) the social sciences survey or problems course; (2) an ethnic studies course that has anthropological, historical, and artistic-literary dimensions in some integrated combination; (3) the sociology of politics or education; (4) political economy and macro-econometric systems; (5) Kulturgeschichte in the form of Jacob Burckhardt's The Civilization of the Italian Renaissance, J. Huizinga's The Waning of the Middle Ages, and William H. McNeill's The Rise of the West: A History of the Human Community;[3] (6) mathematical psychology and sociology; (7) social psychology. Type I interdisciplinary courses capitalize on the intersect of two or more established branches of knowledge to attain their structure.

Type II interdisciplinary courses are not new to the higher education scene either. There are many social sciences examples of this type of course but the following are a few: (1) parliamentary procedure and group decision-making; (2) training police, industrial supervisors, or principals in human relations techniques; (3) the good sportsmanship ethic in varsity and professional sports; (4) leadership training; (5) counselor and therapist training; (6) courses in personal adjustment and confidence training; (7) meditational skills. Type II courses capitalize

on the intersect among particular behavioral shaping skills, be these cognitive, affective, psychomotor, or social. For specific listings of such skills, see the several taxonomies of educational objectives[4] and Havighurst's little volume on developmental tasks.[5]

Type III interdisciplinary courses are coming into vogue, though these too have been around for some time. These courses are characterized by the practical intersect of a branch of knowledge and several behavioral shaping skills. The following are examples of Type III courses: (1) training doctors and nurses in the problems and techniques related to the psychology of dying; (2) the training of risk-bearing administrators through a combined in-service internship and the scientific study of administration; (3) simulation games of war, financial investment, and firm or school administration; (4) a course relating racial and ethnic relations to sensitivity training; (5) the use of directed field study in an urban sociology or cultural anthropology course; (6) pastoral counseling for the ministry to the recidivist criminal, the drug addict, the homosexual, and the normal person. The intersect theory, science, and <u>praxis</u> is the heart of Type III interdisciplinary courses.

<u>The Crux of Evaluation</u>:

How does one assign value or merit to a student's achievement? How does one assign value or merit to a particular course or lesson? How does one assign value or merit to a particular instructor? And to these classic questions which were posed at the outset of this

paper, one must add another. How does one assign value or merit within an interdisciplinary course context? These practical questions require answers at this time.

The answer to these questions rests in the instructor explicitly defining behavioral objectives (sometimes called "terminal behaviors") for shaping and optimizing student achievement. For when the particular learnings are known and stated in explicit behavioral terms by the instructor, he then "shows-and-tells" them. Using various instructional formats, the student knows which particular behaviors are to be learned through the course. Regardless of type of course or level of instruction, behaviorally defined objectives dictate the types of materials and the range of appropriate instructional formats so that the student's achievement can be obtained optimally.

Behaviorally defined instructional goals make it possible for the orthogonal model of evaluation to work. Behaviorally defined objectives provide criteria for estimating and meriting student achievement, for determining the adequacy and appropriateness of elements in the curricular design, and for meriting instructional skill in fair and objectifying ways. The efficacy of results in the induction of the specified terminal behavior in the student as intended by instructional intent and strategy is the crux of evaluation. Regardless of type or level of course, a rather comprehensive specification or inventory of behaviorally defined course objectives becomes the Ockham razor for meriting fairly and objectively student achievement, adequacy and appropriateness of cur-

riculum design, and instructional skill.

Behaviorally Defined Objectives:

There is a small classic autotutor text by Robert F. Mager, titled Preparing Instructional Objectives[6] which should be in the library of every instructor, especially at the college and university level. He provides a practical definition and useful guidance in the preparation of behavioral objectives. His lead is followed here. For emphasis, the imperative mood is used.

(1) Write one statement of instructional objectives which is a description of your educational intents for the student.

(2) In your statement of instructional objectives, describe what the student will be doing when he demonstrates his achievement to you.

(3) In your statement of instructional objectives, describe how you will know the student's accomplishment when he is demonstrating it to you.

(4) Describe the student's terminal behavior (or what the student will be doing) in the following manner: (a) identify in actional verbs and name the overall behaviorally defined act; (b) define the conditions under which the behavior is to occur including the givens and/or restrictions when required; (c) define the criterion of acceptable performance.

(5) Write separate statements of objectives for each behaviorally defined act to be taught. The more such statements of behavioral objectives per course, the better you will have communicated to the student your instructional intents for him.

(6) Provide every student in your course with the list of behaviorally defined instructional objectives prior to teaching the course.

For purposes of illustration, permit the introduction of the following.

The illustration provided below is an interdisciplinary social science course for independent study of the Type III variety. The course is titled "Personal Values Analysis." For brevity, only one behavioral objective is given.

COURSE NO. 199: Independent Study--Personal Values Analysis.

One goal of this independent study course is for the student to perform rational reflective value analysis in several areas of his personal commitments. Student performance of rational reflective value analysis is to be demonstrated and evaluated in the following manner.

(1) In any area of his most personal concern and interest, the student is to list in order of merit his preferences. Example: Music--(a) "hard rock"; (b) "Dixieland"; (c) "Blues". . . (n) "Bach."

(2) The student is to delineate the similarities and the contrasts between the "most merited" and the "least merited" in his hierarchy of preferences. Example: "hard rock" vs. "Bach."

(3) The student is to construct the general valuing principle which orders his intuitive hierarchy of preferences for his selected field. Example: A Dionysian to Apollonian music preference scale, with high preference at the Dionysian end.

(4) The student is to write his full value analysis in essay form at a two hour sitting with any notes and/or other materials he may need for the task.

(5) Full student performance in rational reflective value analysis is demonstrated (given the student's own selected value area) if the student's essay contains the appropriate substantive data for the analysis and the student has used explicitly the full rationale given above in items 1, 2, and 3.

Of the six imperative descriptive statements on the nature of behaviorally defined objectives, the first four were illustrated in Course 199 on personal values analysis. The instructional intent of Course 199 to teach rational reflective values analysis is given, the process being described

and illustrated by example, and a criterion for performance evaluation is provided.

It is readily observable that such a behaviorally defined objective as that given in Course 199 certainly fashions the instructional materials and strategies to be used so that the student can achieve the specified performance task. Certainly the student is directed explicitly to both a process of personal value analysis and to an ego-involved product produced thereby. The explicitness of the performance conditions and criteria demonstrates to instructor and student alike their competence in the instruction and in the learning of the specified task, respectively. This behaviorally defined objective makes the orthogonal model of educational evaluation work fairly and objectively and with salutary cybernetic effect on both student and instructor. Fortunately, there are several college and university level taxonomies of objectives in the cognitive, affective, psychomotor and social domains that are excellent guides for instructors. They are: (1) Bloom's Taxonomy of Educational Objectives. . .Cognitive Domain;[7] (2) Krathwohl's Taxonomy of Educational Objectives. . .Affective Domain;[8] (3) Harrow's A Taxonomy of the Psychomotor Domain;[9] (4) Havighurst's Developmental Tasks and Education.[10] These taxonomies are necessary tools for every college and university instructor so that he need not re-invent the wheel. But instructors will need always to rely upon their creativity and ingenuity to write appropriate behavioral objectives to meet the needs of their individual students.

Humane Education:

As social and behavioral scientists, we are committed to good science and to good education. And we are committed to the use of the best products of our collective labors in these interests. Certainly, the use of behaviorally defined objectives moves our students from a state of dependency upon the instructor to a state of independency from him. Certainly, the valuing of student achievement, curricular design, and instructional skill through behaviorally defined objectives is productive of fair, objective, and cybernetic type evidence that is phenomenally empirical and humane in impact. This writer hopes that behaviorally defined objectives will play a larger part in the adventures in humane education for both the student and the instructor.

## FOOTNOTES

[1]Kaoru Yamamoto, "Many Faces of Teaching," in Teaching: Essays and Readings, edited by Kaoru Yamamoto (Boston: Houghton Mifflin Company, 1969), pp. 3-16.

[2]This section is substantively from: James Steve Counelis, "What is an Interdisciplinary Course in the Social Sciences?", Community College Social Science Quarterly. (In press).

[3]These Kulturgeschichte works are: (1) Jacob Burckhardt, The Civilization of the Renaissance in Italy: An Essay (Oxford: Phaidon Press, Ltd., 1945); (2) J. Huizinga, The Waning of the Middle Ages: A Study of the Forms of Life, Thought, and Art in France and the Netherlands in the XIVth and XVth Centuries (London: Edward Arnold and Co., 1924); (3) William H. McNeill, The Rise of the West: A History of the Human Community (Chicago: The University of Chicago Press, 1963).

[4]These taxonomies of educational objectives are: (1) Benjamin S. Bloom (ed.), Taxonomy of Educational Objectives: The Classification of Educational Goals--Handbook 1: Cognitive Domain (New York: Longmans, Green and Co., 1956); (2) David R. Krathwohl, et al., Taxonomy of Educational Objectives: The Classification of Educational Goals--Handbook 2: Affective Domain (New York: David McKay Company, Inc., 1964); (3) Anita J. Harrow, A Taxonomy of the Psychomotor Domain: A

Guide to Developing Behavioral Objectives (New York: David McKay Company, Inc., 1972).

[5]Robert J. Havighurst, Developmental Tasks and Education (New York: Longmans, Green and Co., 1950).

[6]Robert F. Mager, Preparing Instructional Objectives (Belmont, Ca.: Fearon Publishers, 1962). See also, Bela H. Banathy, Instructional Systems (Palo Alto, Ca.: Fearon Publishers, 1968).

[7]Bloom, supra.

[8]Krathwohl, supra.

[9]Harrow, supra.

[10]Havighurst, supra.

CHART NO. 1: LINEAR PROJECTIVE MODEL OF EDUCATIONAL EVALUATION

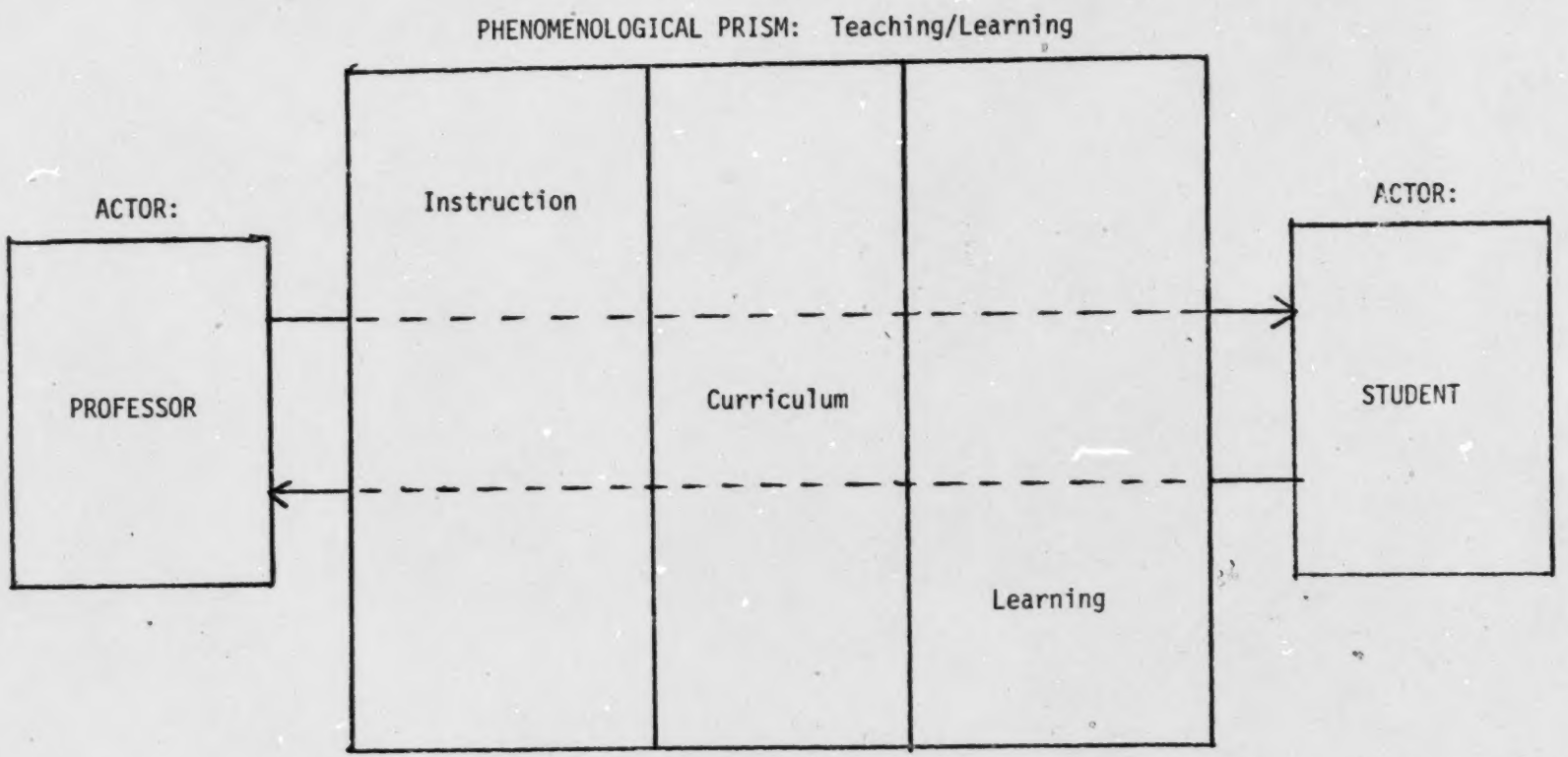

CHART NO. 2: ORTHOGONAL PROJECTIVE MODEL OF EDUCATIONAL EVALUATION